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Water Management on Canadian Farms

Farm Environmental Management in Canada

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. not available for any reference period

.. not available for a specific reference period

... not applicable

0 true zero or a value rounded to zero

0^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded

^{p} preliminary

^{r} revised

x suppressed to meet the confidentiality requirements of the *Statistics Act*

^{E} use with caution

F too unreliable to be published

Data quality symbols

^{A} excellent

^{B} very good

^{C} good

^{D} acceptable

Water Management on Canadian Farms

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Water Management on Canadian Farms

Many modern agricultural practices impact the natural environment. Striving for good environmental stewardship, Canadian farmers are actively involved in environmental initiatives and are adopting farming practices that minimize pollution risks to air, water and soil, while contributing to the conservation of biodiversity.

This article presents information on the various practices used to manage water on Canadian farms. The analysis contained in this article is based on results from the 2001 Farm Environmental Management Survey (FEMS). These results provide insight into the level of adoption of environmentally sound practices and can assist governments, farmers and non-governmental organizations in the promotion and development of new farm environmental programs and practices.

Highlights

- About 75% of farms with land areas adjacent to natural sources of water reported that at least a portion of these areas were vegetated. When vegetated, these areas were usually under permanent vegetation.

- Almost 60% of farms with grazing livestock reported that their livestock were not given access to surface water bodies, and slightly more than 90% reported not feeding livestock within 100 metres of surface water bodies during winter months.

- Among farms that adopted conservation measures to protect natural wetland areas, the most common conservation measures used were fencing and rotational grazing, being reported by 45.5% and 41.7% of farms, respectively.

- Most dairy farms with a liquid manure storage system disposed of the milkhouse wash water in the liquid manure storage system (66.1% of farms). The percentage of dairy farms that use their liquid manure storage system to dispose of milkhouse wash water increased with farm size.

- The most commonly used irrigation systems are sprinklers and guns. Fruit and vegetable farms reported the highest proportion of drip or trickle systems.

- About 36% of farmers tested their domestic water at least once every two years. Ontario farmers were the most inclined to test their well water regularly, as well as Canadian poultry and egg farmers.

- Beneficial management practices (BMPs) for water were fully or partly implemented on 31% of Canadian farms. Most other farms reported that they were not familiar with these practices or thought BMPs for water were not relevant to their operation.

Introduction

Water Management on Canadian Farms is the fifth article in a series of studies collectively called *Farm Environmental Management in Canada*. This series aims to document key results from the 2001 Farm Environmental Management Survey (FEMS).[1] It presents information about farming practices used on Canadian farms as they relate to a number of agri-environmental topics such as manure handling and storage, water management, use of chemical inputs, and sustainable land management practices. The intent of the survey was to provide a broad overview of environmental management on Canadian farms and not to investigate in detail how farmers manage their operations in an effort to protect the environment.

Agricultural activities by their very nature could have a significant impact on the environment. Tillage practices alter natural landscapes, agricultural inputs enter ecosystems and animal by-products influence the ecological balance. Farmers are at the frontlines as stewards of the environment mainly because they manage large areas of land. They are actively involved in environmental programs and are adopting farming practices that minimize pollution risks to air, water and soil, while contributing to the conservation of biodiversity. FEMS results provide insight into the adoption of environmentally sound practices and can assist governments, farmers and non-governmental organizations in the promotion and development of farm environmental initiatives.

This report is specific to water management on Canadian farms and covers practices used to protect natural sources of water, such as maintaining vegetation on areas adjacent to natural sources of water and disposing of milkhouse wash water, as well as practices for proper on-farm use of water for farming and household activities. However, practices related to water are much broader than what is included in this bulletin; other water management practices are covered in other articles in the series, including the distance between manure storage facilities and waterways.

Although the focus of the analysis is mainly at the national level, some data are also presented on a provincial basis. Additional provincial tables are found in Appendix A.

Note to readers:

Readers should be aware that FEMS data alone, though providing a wealth of information, are insufficient to assess environmental risks. FEMS data are meant to provide an overall picture of various farming practices that may have an impact on the environment. To have a full appreciation of farmers' adoption of environmental management practices and of their impacts (positive or negative) on the environment, additional information and more comprehensive analysis are required. Thus, readers are advised to use caution when interpreting these data.

1. FEMS was conducted in March 2002 by Statistics Canada for Agriculture and Agri-Food Canada. The survey provides a broad coverage of farm management practices that are related to the environment in all sectors of Canadian agriculture.

Protection of natural sources of water

Agricultural activities can have significant effects on the quality and health of natural sources of water such as streams, lakes and rivers. A number of farming practices can be adopted to reduce or eliminate risks to natural sources of water. FEMS collected data on some of these practices, more specifically it looked at the maintenance of vegetation on areas adjacent to natural sources of water, the management of grazing livestock to prevent direct access or manure runoff, the adoption of conservation measures for the protection of wetlands, and the disposal of milkhouse wash water and toxic farm wastes.

Vegetation in areas adjacent to natural sources of water

Over the last few decades, many farms have expanded in size, increased their level of specialization and improved their efficiency in order to ensure long-term profitability. Farmers have had to change many of their practices to reach this objective. Among them, to ensure the highest level of financial return on their land investments, there has been a trend to reduce the width of vegetated areas along waterways to cultivate the maximum acreage of land. In these cases, the extent of cultivation sometimes leaves little or no vegetation between cultivated crops and natural waterways. This practice reduces the protection of the adjacent water bodies, resulting in increased risks of erosion and of contaminated water from runoff of sediment, pesticides and nutrients.

Farmers were asked to report if the practice of leaving vegetation on areas adjacent to natural sources of water was adopted on their farms. At the national level, 76.3% of farms with areas adjacent to natural sources of water reported leaving vegetation on these areas in 2001 (Table 1). Of these farms, 95.0% left these areas permanently vegetated, 12.0% reported planting additional vegetation (e.g., perennial crops, trees and bushes) and 2.7% reported planting a winter crop.[2] However, these results need to be interpreted cautiously as the survey did not check if all areas adjacent to natural sources of water on an individual farm were vegetated or only a portion of them.

The percentage of farms reporting vegetation in areas adjacent to natural sources of water does not vary drastically among watersheds.[3] Map 1 illustrates that, for most watersheds, between 65% and 85% of farms with such areas reported vegetation.

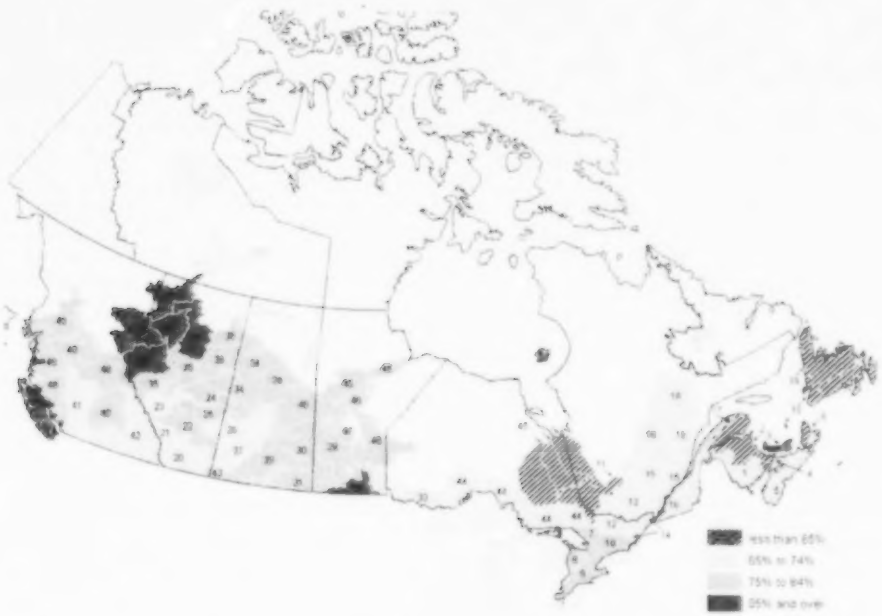
2. A winter crop is seeded late in the fall so that seeds spend winter in the soil. It allows early growing in the spring.
3. A watershed consists of all the land and waterways that drain into the same body of water

Table 1 Vegetation in areas adjacent to natural sources of water, Canada, 2001

	Farms	
	number	%
Farms reporting vegetation	87,830[A]	76.3
Farms reporting no vegetation	27,245[A]	23.7
All farms	**115,075[A]**	**100.0**
For farms reporting vegetation		
Leaving area permanently vegetated	83,430[A]	95.0
Planting additional vegetation	10,565[A]	12.0
Planting a winter crop	2,375[A]	2.7

Notes: Only farms with areas adjacent to natural sources of water were included. Not all areas adjacent to natural sources of water on an individual farm may be vegetated.
For farms reporting vegetation, shares will not add up to 100% as an individual could report more than one type of vegetation.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Map 1 Percentage of farms reporting vegetation on their areas adjacent to natural sources of water, by watershed, 2001



List of watersheds

1 Saint John
2 Cascapédia and Gulf of St. Lawrence
3 Prince Edward Island
4 Bay of Fundy
5 Southeast Atlantic Ocean
6 Cape Breton Island
7 East Georgian Bay
8 East Lake Huron
9 North Lake Erie
10 Lake Ontario
11 Montréal and Upper Ottawa
12 Coulonge and Central Ottawa
13 Gatineau and Lower Ottawa
14 Upper St. Lawrence
15 St-Maurice / Lower St. Lawrence
16 Central St. Lawrence
17 North Gaspé Peninsula
18 Saguenay /Betsiamites /Manicouagan and Aux Outardes
19 North and South Newfoundland
20 Upper South Saskatchewan
21 Bow
22 Red Deer
23 Upper North Saskatchewan
24 Central North Saskatchewan
25 Battle
26 Lower North Saskatchewan
27 Lower South Saskatchewan
28 Qu'Appelle
29 Lake Winnipegosis and Lake Manitoba
30 Assiniboine
31 Souris
32 Red
33 Upper Winnipeg
34 Beaver /Upper and Upper Central Churchill
35 Upper Athabasca
36 Pembina /Lower, Central and Lower Central Athabasca
37 Upper Peace
38 Smoky
39 Vancouver Island
40 Thompson
41 Fraser
42 Columbia
43 Missouri
44 Nipigon /Northwest Lake Superior /North Lake Huron /Wanipitai and French
45 Abitibi /Harricanaw /Moose
46 East and West Lake Winnipeg /Saskatchewan /Rat and Grass /Nelson
47 Central and Lower Central Peace /Hay
48 Skeena /Nechako /Upper Fraser /Gardner Canal /Knight Island /Central and South Pacific

Notes: Only farms with areas adjacent to natural sources of water were included.
Not all areas adjacent to natural sources of water on an individual farm may be vegetated.
Source: Statistics Canada, 2001 Farm Environmental Management Survey

Management of grazing livestock

The management of grazing livestock can also affect the quality of surface water bodies. FEMS collected information on the level of adoption of two management practices for grazing livestock: preventing access of grazing livestock to surface water bodies; and feeding grazing livestock at a sufficient distance from surface water bodies during the winter months.

Allowing grazing livestock to access surface water bodies may affect the quality of the water. Grazing animals can deposit manure, increasing the loading of nutrients (mainly nitrogen and phosphorus) in water and raising the risk of pathogen contamination. They may also alter the banks, resulting in increased erosion, compaction and sedimentation.

At the national level, 56.8% of farms with grazing livestock reported that livestock were not given a direct access to surface water bodies in 2001. This percentage was consistent throughout farm revenue classes (Figure 1). The highest adoption rates for this practice were reported in the Eastern provinces, especially Ontario, and in British Columbia, as shown in Tables A.4.B to A.4.H in Appendix A.

Feeding grazing livestock in concentrated areas near surface water bodies may also negatively affect water quality, unless feeding areas are adequately managed to protect the environment. Limiting the amount of time that livestock spend close to surface water bodies is important to reduce environmental risks to water quality from nutrients and pathogens that could escape the feeding areas through runoff. Feeding at sufficient distance from surface water bodies during the winter months has proven to be an effective practice to prevent runoff.

In 2001, 90.7% of Canadian farms with grazing livestock reported not feeding animals within 100 metres of surface water bodies during winter months. This percentage was consistent throughout farm revenue classes (Figure 2).

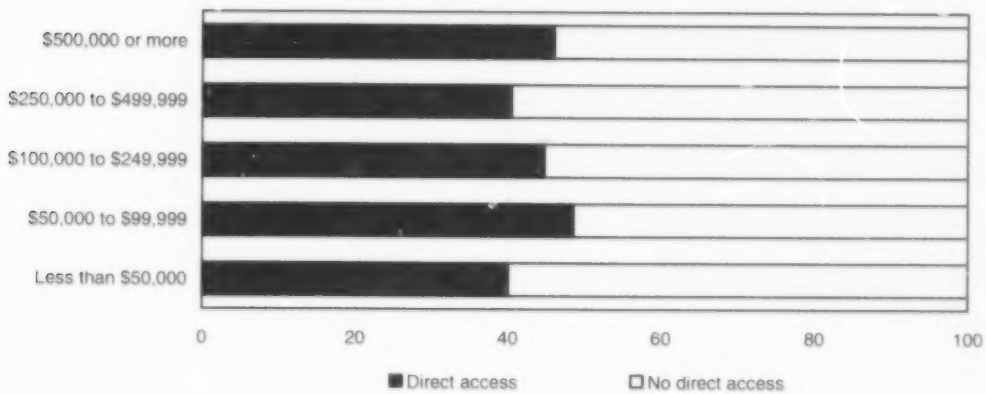
Conservation measures for natural wetland areas

Wetlands are areas saturated with water for periods long enough to significantly alter soils and vegetation and to promote aquatic processes. The five main types of wetlands – bogs, fens, swamps, marshes and shallow water – are characterized by:

- a seasonal or permanent covering of shallow water;
- a water table at or near the surface for most of the growing season;
- saturated organic soils, or peat, the productivity of which depends on the nutrient status and the pH of the site; and
- water-loving plants, such as cattails, rushes, reeds, sedges, dogwood, willows and cedars.

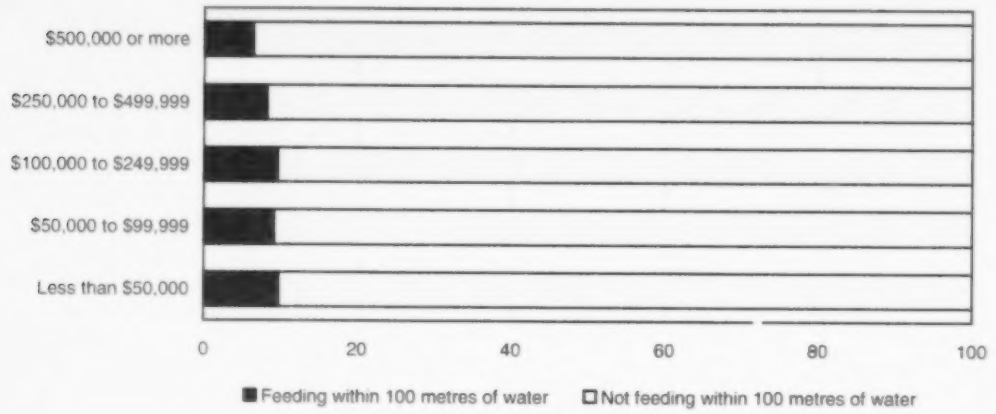
Farmers with natural wetland areas on their farms could adopt measures for their conservation.

Figure 1 Grazing livestock access to surface water bodies, by farm revenue class, Canada, 2001



Notes: Only farms with grazing livestock are included. Farms that had grazing livestock but did not report any farm revenue class were excluded.
Source: Statistics Canada, 2001 Farm Environmental Management Survey

Figure 2 Distance between livestock feeding areas during winter months and surface water bodies, by farm revenue class, Canada, 2001



Notes: Only farms with grazing livestock are included. Farms that had grazing livestock but did not report any farm revenue class were excluded.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table 2 shows that fencing and rotational grazing[4] were the most common measures reported by farmers adopting any type of conservation measure (45.5% and 41.7% of farms respectively). Alternate sources of water and water control structures or dams were also used to conserve wetland areas and were reported by 25.9% and 12.7% of farms respectively. Other types of measures were taken by 25.0% of farms.

Conservation measures adopted by farmers varied only slightly depending on whether their wetlands were seasonal, permanent or both. Farms with both types of wetlands were slightly more inclined to use several types of conservation measures. Farms with seasonal wetlands only reported a slightly greater use of rotational grazing compared to farms with permanent wetlands only.

4. Rotational grazing is the practice of moving grazing cattle to different pastures or grazing paddocks throughout the growing season to allow the vegetation a period of rest and seed production.

Table 2 Conservation measures for the protection of natural wetland areas, by type of wetlands, Canada, 2001

Wetland conservation measure	Farms			
	Seasonal wetlands only	Permanent wetlands only	Both types of wetlands	All wetlands
	number			
Rotational grazing	5,070[A]	5,170[A]	7,510[A]	17,750
Fencing	4,665[A]	6,625[A]	8,070[A]	19,360
Alternate water source	2,780[A]	3,220[A]	5,045[A]	11,045
Water control structures or dams	1,010[A]	1,965[A]	2,420[A]	5,395
Other measures	2,835[A]	4,320[A]	3,490[A]	10,645
Share of farms[1]	percentage			
Rotational grazing	43.9[A]	34.7[A]	46.5[A]	41.7
Fencing	40.4[A]	44.5[A]	50.0[A]	45.5
Alternate water source	24.1[A]	21.6[A]	31.2[A]	25.9
Water control structures or dams	8.8[A]	13.2[A]	15.0[A]	12.7
Other measures	24.6[A]	29.0[A]	21.6[A]	25.0

1. Shares add up to more than 100% because an individual farm could report more than one type of conservation measure to protect natural wetland areas.
Note: Only farms adopting conservation measures to protect natural wetlands are included.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Disposal of milkhouse wash water

Milkhouse wash water[5] is a waste common to all dairy farm operations that can potentially contaminate soil and water. The volume of milkhouse wash water has increased over the last decades with the increased size of the dairy herd and the increased prevalence of automated technologies requiring higher volumes of water.

Some methods used to dispose of milkhouse wash water are more environmentally friendly than others. The main recommended methods are the disposal of milkhouse wash water into the liquid manure storage system[6], the use of a tank or an in-ground disposal field, a vegetative filter strip bed, constructed wetlands and the use of a flocculator.[7]

FEMS collected information on the disposal of milkhouse wash water for dairy farms storing liquid manure on the operation. Of these dairy farms, 66.1% disposed of the milkhouse wash water through their liquid manure storage system. Another 11.4% treated the wash water separately from the liquid manure storage system and 22.5% of farms did not treat their milkhouse wash water in any manner.

The disposal of milkhouse wash water into the liquid manure storage increased with farm revenue (Figure 3). The proportion of farms treating their milkhouse wash water separately from the liquid manure storage system was rather constant among farm revenue classes at about 15%.

Disposal of toxic farm wastes

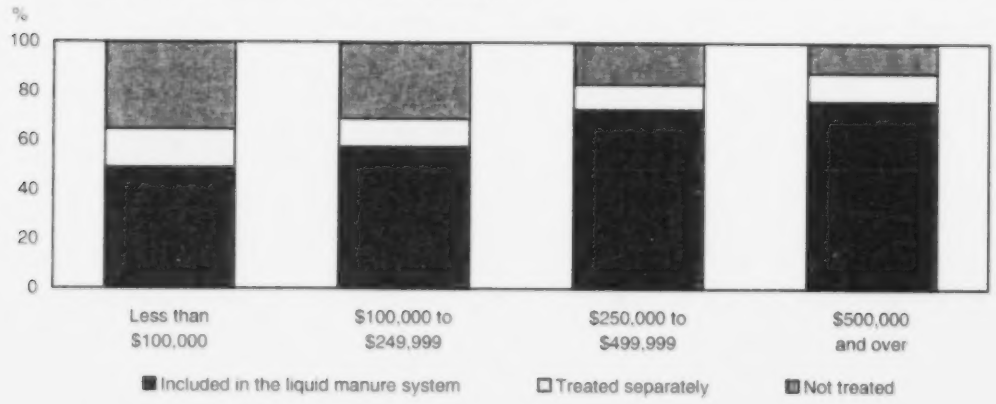
Toxic farm wastes require special disposal as they can cause health risks and contaminate soil and water. Examples of toxic farm wastes include pesticide containers and products, batteries, antifreeze, veterinary products and used oil.[8]

FEMS collected information on the disposal methods used by farmers for any of their toxic farm wastes. Some typical methods to dispose of toxic farm wastes safely are: to return products and containers to the supplier, to rinse and dispose of with domestic waste (e.g. pesticide containers), to use a specialized recycling program, and to use pick-up services for dangerous goods waste. Available disposal methods could vary among provinces and zones due to different types of services, regulations and programs.

Figure 4 shows that the most commonly reported disposal methods were the use of a specialized recycling program (54.2% of farms) and the return of the toxic farm waste to the supplier (40.1% of farms).

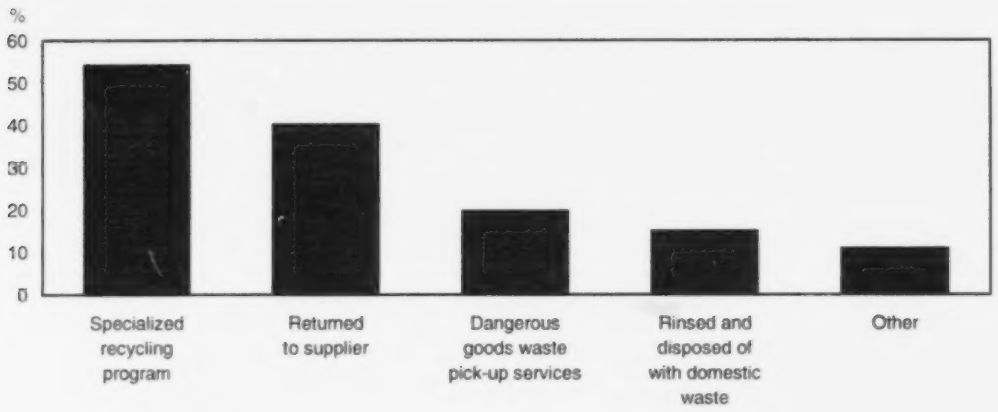
5. Milkhouse wash water contains a considerable amount of milk solids washed from the bulk tank, pipeline milker, or other milk-handling equipment.
6. For information on liquid and solid manure storage systems, refer to the first article in this series, *Manure Storage in Canada*, 21-021-MIE, 2003001.
7. A flocculator removes organic matter and phosphorus from wastewater.
8. FEMS explicitly excluded dead animals.

Figure 3 Disposal of milkhouse wash water on Canadian dairy farms with a liquid manure storage system, by farm revenue class, Canada, 2001



Note: Includes only dairy farms with a liquid manure storage system.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Figure 4 Disposal of toxic farm wastes, Canada, 2001



Note: Shares sum up to more than 100% since a farm could report more than one toxic farm waste disposal method.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

About 20% of farms used a dangerous goods pick-up service to dispose of at least some of their toxic farm wastes. Their disposal with domestic waste after the rinsing of the container was reported by 15.0% of farms. Other disposal methods (such as burning and using local dump sites) were used by 10.9% of farms.

Use of water for farming and household activities

Farmers use water every day for farming and household activities. FEMS collected information on the management of water used for irrigation and the frequency with which farmers test their domestic water supply to ensure that the water used is of adequate quality.

Types of irrigation systems

From year to year, rainfall may be inadequate to meet the water requirements of growing crops. Irrigation can be used to supplement the amount of rain water for crops. The need for an irrigation system has to be evaluated against the risks of not receiving enough water from rainfall and the costs of irrigating to prevent such risks. Irrigation is usually used on high-value crops grown in areas that have a high probability of dry conditions during the growing season. With the higher occurrence of drought in recent years, an increasing area of field crops is being irrigated.

In 2001, 8.0% of Canadian farms reported irrigating their land. This percentage ranged from 3.0% on grain and oilseed farms to 54.6% on fruit and vegetable farms (Table 3). Regional distributions are presented in Tables A.9.B and A.9.C in the Appendix.

There are many types of irrigation systems. Sprinkler and gun systems are the least water-efficient, while drip or trickle systems are the most efficient in providing water to plants. The most commonly used irrigation systems by Canadian farms in 2001 were sprinkler (49.8%) and gun (23.2%) systems. Drip or trickle systems and other systems such as flooding and subsurface irrigation represented respectively 13.1% and 13.8% of the irrigation systems used.

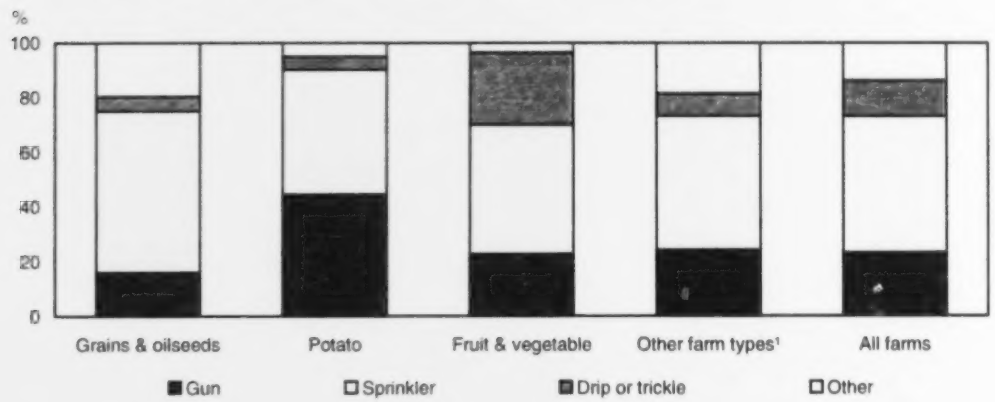
The choice of irrigation systems differed among farm types. Figure 5 shows that potato farms used almost exclusively gun and sprinkler systems, in similar proportions. The majority of fruit and vegetable farms irrigated their land with a gun or sprinkler system although drip or trickle systems represented about 25% of the irrigation systems used. The sprinkler system was the most prevalent for grain and oilseed farms (59.0%), followed by guns and other less common types of irrigation systems. Drip or trickle systems were scarcely reported on these farms and, when reported, it is likely that these systems were used for other crops.

Table 3 Use of irrigation systems, by farm type, Canada, 2001

	Farms		
	Using irrigation	Not using irrigation	Total
		number	
Grain and oilseed	2,095[A]	66,650[A]	68,745
Potato	390[B]	870[B]	1,260
Fruit and vegetable	3,835[A]	3,195[A]	7,030
Other[1]	7,310[A]	85,255[A]	92,565
All farms	**13,630[A]**	**155,970[A]**	**169,600**
		percentage	
Grain and oilseed	3.0	97.0	100
Potato	31.0	69.0	100
Fruit and vegetable	54.6	45.4	100
Other[1]	7.9	92.1	100
All farms	**8.0**	**92.0**	**100**

1. Includes farm types not listed in this table, such as dairy and beef farms. These farms may have irrigation systems for secondary activities.
Note: Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Figure 5 Types of irrigation systems used, by farm type, Canada, 2001



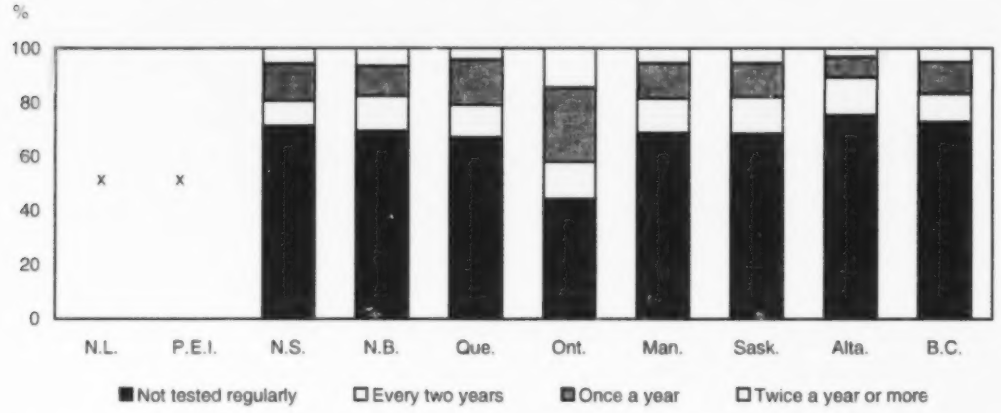
1. Includes farm types not listed in this graph such as dairy and beef farms. These farms may have irrigation systems for secondary activities.
Note: Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Domestic water testing

Good quality domestic water is essential to human and animal health and agricultural productivity. Over the last few years, there have been growing concerns in rural areas about the quality of domestic water. Rural residents have been encouraged to test their domestic water on a regular basis to prevent drinking contaminated water.

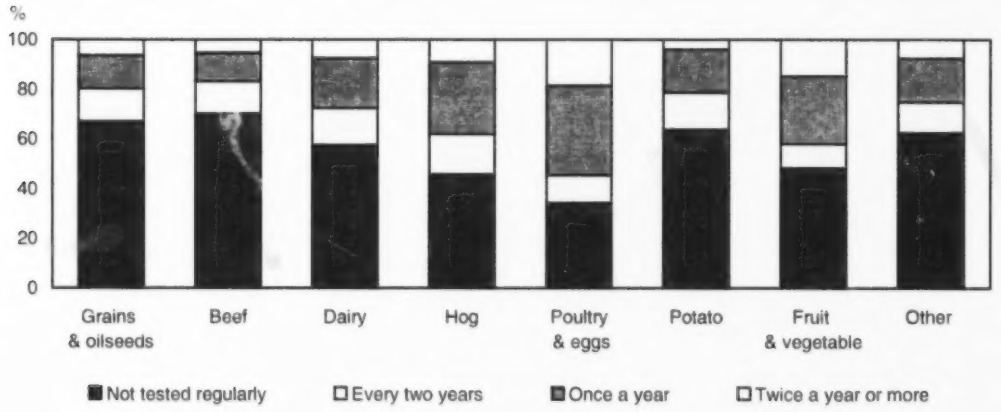
FEMS collected information on how often farmers tested their domestic water. In 2001, most farmers reported not testing regularly; 7.0% of farmers reported testing twice a year or more, 15.8% once a year, 13.1% every two years and 64.1% did not test on a regular basis. These percentages were rather consistent throughout the provinces. However Ontario farmers tested their domestic water more frequently; 14.5% of farmers reported testing twice a year or more, 27.5% once a year, 13.6% every two years, while 44.4% did not test on a regular basis (Figure 6). This higher level of testing in Ontario may be related, at least partly, to the waterborne disease outbreak that occurred in Walkerton in 2000.

Figure 6 Frequency of domestic water testing on Canadian farms, by province, 2001



Note: Excludes farms that do not need to test their domestic water (e.g. connected to municipal water supply).
Source: Statistics Canada, 2001 Farm Environmental Management Survey

Figure 7 Frequency of domestic water testing on Canadian farms, by farm type, 2001



Notes: Excludes farms that do not need to test their domestic water (e.g. connected to municipal water supply).
Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Hog, poultry, and fruit and vegetable farms tested their domestic water more frequently than other types of farms (Figure 7). Frequency of testing was the lowest for grain and oilseed farms and beef farms.

Adoption level of beneficial management practices for water

Beneficial management practices (BMPs) for water are agricultural practices that help conserve the quantity and quality of water. This article presents information on a limited number of practices related to water management. Other practices – such as the storage, handling and application of manure, nutrients and pesticides, as well as the storage of fuel and silage and the management of drainage – can also relate to water management.

Farmers were asked if, in their opinion, BMPs for water were implemented on their farm. In 2001, 19.4% of Canadian farms reported that they fully implemented BMPs for water on their farm and 11.6% reported partial implementation (Table 4).

Table 4 Level of implementation of beneficial management practices (BMPs) for water, Canada, 2001

	Farms	
	number	%
Fully implemented	35,435[A]	19.4
Partially implemented	21,205[A]	11.6
Not available in my region	3,670[A]	2.0
Unfamiliar with BMPs for my region	80,425[A]	43.9
Not relevant for my operation	42,390[A]	23.1
Total	**183,125[A]**	**100**

Notes: This classification of farms is based on farmers' opinions about their practices related to water management. The survey did not provide an extensive list of BMPs for water to support farmers in responding to this question.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Conversely 43.9% reported to not be familiar with BMPs for water in their region, and almost one Canadian farmer out of four reported that BMPs for water were not relevant for their farm operation (23.1%). This last result is surprising as most Canadian farms use an array of practices that could have impacts on water and suggests that this group of farmers may not be able to identify which practices are considered "BMPs for water".[9]

Summary

This analysis provides some key insights into water management practices used on Canadian farms in 2001. More specifically, this study examines practices for the protection of natural water resources and those for management of water directly used on Canadian farms.

With respect to the protection of natural water resources, FEMS collected data on the maintenance of vegetation in areas adjacent to natural sources of water, the management of grazing livestock around surface water bodies, the type of conservation measures used for natural wetlands and the disposal of milkhouse wash water and toxic farm wastes.

Results show that about 75% of farms with areas adjacent to natural sources of water left at least a portion of these areas vegetated, usually with permanent vegetation, and that this percentage was not very different among watersheds. More than half of farms with grazing livestock did not give them access to surface water bodies, and the large majority of such farms did not feed their animals within 100 metres of surface water bodies during winter months. Fencing and rotational grazing were the most commonly used practices for the conservation of natural wetlands.

Most dairy farms (66.1%) storing liquid manure disposed of their milkhouse wash water into the liquid manure storage system, 11.4% treated it separately from the liquid manure system, and the last group of 22.5% of farms did not treat their milkhouse wash water in any manner. The most common methods used to dispose of toxic farm wastes are specialized recycling programs (54.2% of farms), and the return of wastes to the supplier (40.1% of farms).

With respect to the use of water for farming or household activities, FEMS collected data on the use of water for irrigation and the testing of domestic water. Eight percent of Canadian farms used irrigation to better meet the water requirement of their crops; guns and sprinklers were the most commonly used irrigation systems, even on horticultural farms. About 36% of Canadian farmers tested their domestic water at least once every two years; Ontario farmers had the most frequent water testing habits.

Farmers were also asked to which extent they implement BMPs for water on their farm. Thirty one percent of Canadian farms reported that they fully or partly implement BMPs for water on their farm, while most of the remaining farms reported to not be aware of the BMPs for water in their region or that BMPs for water were not relevant for their farm operation.

9. This classification of farms is based on farmers' opinions about their practices related to water management. The survey did not provide an extensive list of BMPs for water to support farmers in responding to this question.

Appendix A: Supplementary tables

Table A.1 Vegetation in areas adjacent to natural sources of water, Canada and provinces, 2001

	Farms					
	Reporting vegetation		Reporting no vegetation		All farms	
	number	%	number	%	number	%
Newfoundland and Labrador	x	x	x	x	x	x
Prince Edward Island	x	x	x	x	x	x
Nova Scotia	1,065[B]	68.3	495[B]	31.7	1,560	100
New Brunswick	935[B]	65.6	490[B]	34.4	1,425	100
Quebec	13,040[A]	69.8	5,640[A]	30.2	18,680	100
Ontario	22,960[A]	78.2	6,410[A]	21.8	29,370	100
Manitoba	6,880[B]	78.7	1,865[A]	21.3	8,745	100
Saskatchewan	19,960[A]	79.3	5,225[A]	20.7	25,185	100
Alberta	17,865[A]	75.8	5,710[A]	24.2	23,575	100
British Columbia	4,055[A]	76.7	1,235[A]	23.3	5,290	100
Canada	**87,830[A]**	**76.3**	**27,245[A]**	**23.7**	**115,075**	**100**

Notes: Only farms with areas adjacent to natural sources of water were included. Not all areas adjacent to natural sources of water on an individual farm may be vegetated.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.2 Type of vegetation typically grown on farms with areas adjacent to natural sources of water, Canada and provinces, 2001

	Farms					
	Leaving area permanently vegetated		Planting additional vegetation		Planting a winter crop	
	number	%	number	%	number	%
Newfoundland and Labrador	x	x	x	x	x	x
Prince Edward Island	x	x	x	x	x	x
Nova Scotia	1,020[C]	95.8	100[A]	9.4	45[A]	4.2
New Brunswick	900[C]	96.3	60[A]	6.4	50[A]	5.3
Quebec	11,995[A]	92.0	1,345[A]	10.3	180[A]	1.4
Ontario	21,630[A]	94.2	3,695[A]	16.1	1,420[A]	6.2
Manitoba	6,625[B]	96.3	745[A]	10.8	140[A]	2.0
Saskatchewan	19,045[A]	95.4	2,335[A]	11.7	135[A]	0.7
Alberta	17,355[A]	97.1	1,590[A]	8.9	205[A]	1.1
British Columbia	3,855[B]	95.1	560[A]	13.8	160[A]	3.9
Canada	**83,430[A]**	**95.0**	**10,565[A]**	**12.0**	**2,375[A]**	**2.7**

Notes: Only farms with areas adjacent to natural sources of water were included. Not all areas adjacent to natural sources of water on an individual farm may be vegetated.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.3 Vegetation in areas adjacent to natural sources of water, by watershed, 2001

	Farms					
	With vegetation		No vegetation		All farms	
	number	%	number	%	number	%
Saint John	785[C]	68.0	370[B]	32.0	1,155	100
Cascapédia and Gulf of St. Lawrence	460[C]	63.0	270[C]	37.0	730	100
Prince Edward Island	1,040[B]	86.7	160[A]	13.3	1,200	100
Bay of Fundy	885[C]	68.9	400[B]	31.1	1,285	100
Southeast Atlantic Ocean	145[D]	67.4	70[C]	32.6	215	100
Cape Breton Island	x	x	x	x	95	100
East Georgian Bay	1,410[C]	76.2	440[B]	23.8	1,850	100
East Lake Huron	4,770[B]	75.2	1,570[A]	24.8	6,340	100
North Lake Erie	9,295[A]	83.0	1,910[A]	17.0	11,205	100
Lake Ontario	4,010[B]	76.4	1,240[A]	23.6	5,250	100
Montréal and Upper Ottawa	335[D]	62.6	200[D]	37.4	535	100
Coulonge and Central Ottawa	880[C]	69.8	380[B]	30.2	1,260	100
Gatineau and Lower Ottawa	2,135[B]	70.8	880[B]	29.2	3,015	100
Upper St. Lawrence	815[C]	76.9	245[C]	23.1	1,060	100
St-Maurice/Lower St. Lawrence	3,960[B]	66.7	1,975[A]	33.3	5,935	100
Central St. Lawrence	6,215[A]	73.9	2,200[A]	26.1	8,415	100
North Gaspé Peninsula	580[C]	76.3	180[C]	23.7	760	100
Saguenay /Betsiamites /Manicouagan and Aux Outardes	585[C]	71.8	230[C]	28.2	815	100
North and South Newfoundland	x	x	x	x	105	100
Upper South Saskatchewan	1,685[C]	69.8	730[B]	30.2	2,415	100
Bow	795[C]	69.4	350[C]	30.6	1,145	100
Red Deer	3,980[B]	75.2	1,310[A]	24.8	5,290	100
Upper North Saskatchewan	945[C]	72.4	360[B]	27.6	1,305	100
Central North Saskatchewan	3,620[B]	78.2	1,010[A]	21.8	4,630	100
Battle	2,680[B]	74.3	925[B]	25.7	3,605	100
Lower North Saskatchewan	2,000[C]	73.5	720[B]	26.5	2,720	100
Lower South Saskatchewan	2,665[B]	72.3	1,020[B]	27.7	3,685	100
Qu'Appelle	5,810[B]	80.3	1,425[A]	19.7	7,235	100
Lake Winnipegosis and Lake Manitoba	2,545[C]	77.4	745[B]	22.6	3,290	100
Assiniboine	4,630[B]	80.4	1,130[A]	19.6	5,760	100
Souris	3,065[B]	78.9	820[B]	21.1	3,885	100
Red	2,205[C]	86.1	355[B]	13.9	2,560	100
Upper Winnipeg	195[C]	73.6	70[B]	26.4	265	100
Beaver/Upper/Upper Central Churchill	1,015[D]	83.2	205[B]	16.8	1,220	100
Upper Athabasca	200[D]	76.9	60[C]	23.1	260	100
Pembina /Lower, Central, and Lower Central Athabasca	1,740[B]	76.0	550[B]	24.0	2,290	100
Upper Peace	1,480[C]	87.3	215[B]	12.7	1,695	100
Smoky	1,100[C]	85.3	190[B]	14.7	1,290	100
Vancouver Island	425[D]	87.6	60[B]	12.4	485	100
Thompson	580[C]	74.4	200[B]	25.6	780	100
Fraser River	1,125[B]	73.8	400[B]	26.2	1,525	100
Columbia River	630[C]	72.0	245[B]	28.0	875	100
Missouri	805[D]	83.9	155[B]	16.1	960	100
Nipigon /Northwest Lake Superior / North Lake Huron /Wanipitai and French	420[C]	70.0	180[C]	30.0	600	100
Abitibi /Harricanaw /Moose	170[D]	59.6	115[D]	40.4	285	100
East and West Lake Winnipeg /Saskatchewan / Rat and Grass /Nelson	1,565[C]	79.0	415[B]	21.0	1,980	100
Central and Lower Central Peace /Hay	690[D]	84.1	130[B]	15.9	820	100
Skeena /Nechako /Upper Fraser /Gardner Canal /Knight Island /South Pacific	785[C]	80.1	195[B]	19.9	980	100
Canada	**87,980[A]**	**76.5**	**27,055[A]**	**23.5**	**115,035**	**100**

Notes: Only farms with areas adjacent to natural sources of water were included. Not all areas adjacent to natural sources of water on an individual farm may be vegetated.
Due to rounding, figures may not add up to totals.

Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.4.A Grazing livestock access to surface water bodies, by farm revenue class, Canada, 2001

	Farms					
	Direct access		No direct access		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	15,450[A]	40.0	23,165[A]	60.0	38,615	100
$50,000 to $99,999	9,110[A]	48.5	9,670[A]	51.5	18,780	100
$100,000 to $249,999	10,965[A]	44.8	13,530[A]	55.2	24,495	100
$250,000 to $499,999	3,930[A]	40.4	5,790[B]	59.6	9,720	100
$500,000 or more	2,020[B]	46.0	2,375[B]	54.0	4,395	100
All revenue classes	**41,470[A]**	**43.2**	**54,540[A]**	**56.8**	**96,010**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.4.B Grazing livestock access to surface water bodies, by farm revenue class, Atlantic Provinces, 2001

	Farms					
	Direct access		No direct access		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	665[B]	40.7	970[B]	59.3	1,635	100
$50,000 to $99,999	150[D]	46.2	175[D]	53.8	325	100
$100,000 to $249,999	195[C]	32.5	405[D]	67.5	600	100
$250,000 to $499,999	115[D]	33.3	230[D]	66.7	345	100
$500,000 or more	95[D]	39.6	145[E]	60.4	240	100
All revenue classes	**1,220[B]**	**38.8**	**1,925[B]**	**61.2**	**3,145**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.4.C Grazing livestock access to surface water bodies, by farm revenue class, Quebec, 2001

	Farms					
	Direct access		No direct access		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	2,065[B]	52.9	1,840[B]	47.1	3,905	100
$50,000 to $99,999	960[B]	41.7	1,340[C]	58.3	2,300	100
$100,000 to $249,999	1,550[B]	32.7	3,185[B]	67.3	4,735	100
$250,000 to $499,999	460[B]	26.7	1,260[C]	73.3	1,720	100
$500,000 or more	230[D]	39.7	350[D]	60.3	580	100
All revenue classes	**5,255[A]**	**39.8**	**7,960[A]**	**60.2**	**13,215**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.4.D Grazing livestock access to surface water bodies, by farm revenue class, Ontario, 2001

	Farms					
	Direct access		No direct access		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	2,665[A]	26.9	7,260[B]	73.1	9,925	100
$50,000 to $99,999	885[B]	26.7	2,425[C]	73.3	3,310	100
$100,000 to $249,999	945[B]	22.5	3,260[B]	77.5	4,205	100
$250,000 to $499,999	450[B]	20.6	1,730[C]	79.4	2,180	100
$500,000 or more	355[C]	36.6	615[D]	63.4	970	100
All revenue classes	**5,300[A]**	**25.7**	**15,285[A]**	**74.3**	**20,585**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.4.E Grazing livestock access to surface water bodies, by farm revenue class, Manitoba, 2001

	Farms					
	Direct access		No direct access		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	1,110[B]	38.3	1,785[C]	61.7	2,895	100
$50,000 to $99,999	855[C]	49.3	880[C]	50.7	1,735	100
$100,000 to $249,999	1,205[C]	48.7	1,270[C]	51.3	2,475	100
$250,000 to $499,999	495[D]	55.0	405[D]	45.0	900	100
$500,000 or more	115[E]	41.8	160[E]	58.2	275	100
All revenue classes	**3,785[A]**	**45.7**	**4,505[B]**	**54.3**	**8,290**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.4.F Grazing livestock access to surface water bodies, by farm revenue class, Saskatchewan, 2001

	Farms					
	Direct access		No direct access		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	3,300[B]	53.2	2,900[B]	46.8	6,200	100
$50,000 to $99,999	2,720[B]	61.2	1,725[B]	38.8	4,445	100
$100,000 to $249,999	3,465[B]	63.6	1,980[B]	36.4	5,445	100
$250,000 to $499,999	865[C]	53.7	745[C]	46.3	1,610	100
$500,000 or more	440[D]	65.7	230[D]	34.3	670	100
All revenue classes	**10,790[A]**	**58.8**	**7,575[A]**	**41.2**	**18,365**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.4.G Grazing livestock access to surface water bodies, by farm revenue class, Alberta, 2001

	Farms					
	Direct access		No direct access		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	4,655[A]	42.3	6,345[A]	57.7	11,000	100
$50,000 to $99,999	3,265[B]	53.1	2,885[B]	46.9	6,150	100
$100,000 to $249,999	3,300[B]	51.2	3,145[B]	48.8	6,445	100
$250,000 to $499,999	1,415[C]	53.3	1,240[B]	46.7	2,655	100
$500,000 or more	700[C]	50.9	675[C]	49.1	1,375	100
All revenue classes	**13,335[A]**	**48.3**	**14,285[A]**	**51.7**	**27,620**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.4.H Grazing livestock access to surface water bodies, by farm revenue class, British Columbia, 2001

	Farms					
	Direct access		No direct access		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	995[B]	32.4	2,075[B]	67.6	3,070	100
$50,000 to $99,999	255[D]	51.5	240[D]	48.5	495	100
$100,000 to $249,999	310[D]	52.1	285[D]	47.9	595	100
$250,000 to $499,999	135[D]	42.2	185[D]	57.8	320	100
$500,000 or more	80[D]	27.6	210[E]	72.4	290	100
All revenue classes	**1,780[A]**	**37.3**	**2,995[B]**	**62.7**	**4,775**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.5.A Distance between livestock feeding areas during winter months and surface water bodies, Canada, 2001

	Farms					
	Within 100 metres		Not within 100 metres		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	3,770[A]	9.8	34,865[A]	90.2	38,635	100
$50,000 to $99,999	1,725[A]	9.2	17,065[A]	90.8	18,790	100
$100,000 to $249,999	2,365[A]	9.6	22,190[A]	90.4	24,555	100
$250,000 to $499,999	800[A]	8.2	8,940[B]	91.8	9,740	100
$500,000 or more	280[A]	6.4	4,105[C]	93.6	4,385	100
All revenue classes	**8,930[A]**	**9.3**	**87,160[A]**	**90.7**	**96,090**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.5.B Distance between livestock feeding areas during winter months and surface water bodies, Atlantic Provinces, 2001

	Farms					
	Within 100 metres		Not within 100 metres		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	240[B]	14.8	1,385[C]	85.2	1,625	100
$50,000 to $99,999	65[C]	19.7	265[E]	80.3	330	100
$100,000 to $249,999	x	x	x	x	595	100
$250,000 to $499,999	25[B]	7.4	315[E]	92.6	340	100
$500,000 or more	x	x	x	x	245	100
All revenue classes	**375[A]**	**11.9**	**2,770[B]**	**88.1**	**3,145**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.5.C Distance between livestock feeding areas during winter months and surface water bodies, Quebec, 2001

	Farms					
	Within 100 metres		Not within 100 metres		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	585[A]	15.0	3,305[B]	85.0	3,890	100
$50,000 to $99,999	260[A]	11.3	2,035[C]	88.7	2,295	100
$100,000 to $249,999	410[A]	8.7	4,320[B]	91.3	4,730	100
$250,000 to $499,999	x	x	x	x	1,710	100
$500,000 or more	x	x	x	x	580	100
All revenue classes	**1,385[A]**	**10.5**	**11,825[A]**	**89.5**	**13,210**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.5.D Distance between livestock feeding areas during winter months and surface water bodies, Ontario, 2001

	Farms					
	Within 100 metres		Not within 100 metres		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	875[A]	8.8	9,120[B]	91.2	9,995	100
$50,000 to $99,999	300[A]	9.0	3,020[C]	91.0	3,320	100
$100,000 to $249,999	415[A]	9.8	3,810[C]	90.2	4,225	100
$250,000 to $499,999	205[A]	9.4	1,970[C]	90.6	2,175	100
$500,000 or more	60[B]	6.3	900[D]	93.8	960	100
All revenue classes	**1,855[A]**	**9.0**	**18,815[A]**	**91.0**	**20,670**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.5.E Distance between livestock feeding areas during winter months and surface water bodies, Manitoba, 2001

	Farms					
	Within 100 metres		Not within 100 metres		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	255[A]	8.8	2,650[C]	91.2	2,905	100
$50,000 to $99,999	145[B]	8.3	1,600[D]	91.7	1,745	100
$100,000 to $249,999	250[A]	10.1	2,225[C]	89.9	2,475	100
$250,000 to $499,999	x	x	x	x	915	100
$500,000 or more	x	x	x	x	275	100
All revenue classes	**755[A]**	**9.1**	**7,550[B]**	**90.9**	**8,305**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.5.F Distance between livestock feeding areas during winter months and surface water bodies, Saskatchewan, 2001

	Farms					
	Within 100 metres		Not within 100 metres		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	790[A]	12.7	5,420[B]	87.3	6,210	100
$50,000 to $99,999	420[A]	9.5	4,010[C]	90.5	4,430	100
$100,000 to $249,999	595[A]	10.9	4,865[B]	89.1	5,460	100
$250,000 to $499,999	155[B]	9.6	1,455[D]	90.4	1,610	100
$500,000 or more	35[B]	5.2	635[E]	94.8	670	100
All revenue classes	**1,995[A]**	**10.9**	**16,385[A]**	**89.1**	**18,380**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.5.G Distance between livestock feeding areas during winter months and surface water bodies, Alberta, 2001

	Farms					
	Within 100 metres		Not within 100 metres		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	655[A]	6.0	10,300[B]	94.0	10,955	100
$50,000 to $99,999	495[A]	8.0	5,685[B]	92.0	6,180	100
$100,000 to $249,999	630[A]	9.7	5,845[B]	90.3	6,475	100
$250,000 to $499,999	190[A]	7.1	2,475[C]	92.9	2,665	100
$500,000 or more	115[B]	8.4	1,260[D]	91.6	1,375	100
All revenue classes	**2,075[A]**	**7.5**	**25,575[A]**	**92.5**	**27,650**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.5.H Distance between livestock feeding areas during winter months and surface water bodies, British Columbia, 2001

	Farms					
	Within 100 metres		Not within 100 metres		All farms	
	number	%	number	%	number	%
Gross farm revenue						
Less than $50,000	355[A]	11.7	2,685[B]	88.3	3,040	100
$50,000 to $99,999	50[B]	10.0	450[E]	90.0	500	100
$100,000 to $249,999	55[B]	9.1	550[C]	90.9	605	100
$250,000 to $499,999	x	x	x	x	320	100
$500,000 or more	x	x	x	x	290	100
All revenue classes	**495[A]**	**10.4**	**4,250[B]**	**89.6**	**4,745**	**100**

Notes: Only farms with grazing livestock were included. Farms that have grazing livestock but did not report any farm revenue class were excluded.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.6.A Conservation measures for the protection of natural wetland areas, by type of wetlands, Canada, 2001

	Farms		
	Seasonal wetlands	Permanent wetlands	Both wetlands
		number	
Rotational grazing	5,070[A]	5,170[A]	7,510[A]
Fencing	4,665[A]	6,625[A]	8,070[A]
Alternate water source	2,780[A]	3,220[A]	5,045[A]
Water control structures/dams	1,010[A]	1,965[A]	2,420[A]
Other measures	2,835[A]	4,320[A]	3,490[A]
		%	
Rotational grazing	43.9	34.7	46.5
Fencing	40.4	44.5	50.0
Alternate water source	24.1	21.6	31.2
Water control structures/dams	8.8	13.2	15.0
Other measures	24.6	29.0	21.6

Notes: Only farms adopting conservation measures to protect natural wetland areas were included.
Shares add up to more than 100% because an individual farm could report more than one type of measure to conserve natural wetland areas.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.6.B Conservation measures for the protection of natural wetland areas, by type of wetlands, Atlantic Provinces, 2001

	Farms		
	Seasonal wetlands	Permanent wetlands	Both wetlands
	number		
Rotational grazing	75[D]	165[B]	135[B]
Fencing	130[D]	375[B]	235[C]
Alternate water source	x	x	x
Water control structures/dams	x	x	x
Other measures	x	x	x
	%		
Rotational grazing	30.0	24.4	29.3
Fencing	52.0	55.6	51.1
Alternate water source	x	x	x
Water control structures/dams	x	x	x
Other measures	x	x	x

Notes: Only farms adopting conservation measures to protect natural wetland areas were included.
Shares add up to more than 100% because an individual farm could report more than one type of measure to conserve natural wetland areas.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.6.C Conservation measures for the protection of natural wetland areas, by type of wetlands, Quebec, 2001

	Farms		
	Seasonal wetlands	Permanent wetlands	Both wetlands
	number		
Rotational grazing	450[C]	340[C]	340[C]
Fencing	325[C]	410[C]	335[C]
Alternate water source	185[B]	175[B]	165[B]
Water control structures/dams	x	x	x
Other measures	x	x	x
	%		
Rotational grazing	62.1	37.8	60.2
Fencing	44.8	45.6	59.3
Alternate water source	25.5	19.4	29.2
Water control structures/dams	x	x	x
Other measures	x	x	x

Notes: Only farms adopting conservation measures to protect natural wetland areas were included.
Shares add up to more than 100% because an individual farm could report more than one type of measure to conserve natural wetland areas.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.6.D Conservation measures for the protection of natural wetland areas, by type of wetlands, Ontario, 2001

	Farms		
	Seasonal wetlands	Permanent wetlands	Both wetlands
	number		
Rotational grazing	650[B]	1,040[A]	1,015[B]
Fencing	1,300[B]	2,540[B]	1,650[B]
Alternate water source	465[B]	775[A]	735[A]
Water control structures/dams	170[A]	650[A]	390[A]
Other measures	525[B]	1,510[A]	700[A]
	%		
Rotational grazing	28.0	20.8	34.5
Fencing	55.9	50.9	56.1
Alternate water source	20.0	15.5	25.0
Water control structures/dams	7.3	13.0	13.3
Other measures	22.6	30.3	23.8

Notes: Only farms adopting conservation measures to protect natural wetland areas were included.
Shares add up to more than 100% because an individual farm could report more than one type of measure to conserve natural wetland areas.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.6.E Conservation measures for the protection of natural wetland areas, by type of wetlands, Manitoba, 2001

	Farms		
	Seasonal wetlands	Permanent wetlands	Both wetlands
	number		
Rotational grazing	515[C]	615[C]	910[B]
Fencing	400[B]	400[B]	830[B]
Alternate water source	255[B]	255[B]	575[B]
Water control structures/dams	75[A]	90[B]	360[A]
Other measures	295[B]	285[A]	365[A]
	%		
Rotational grazing	50.0	52.1	50.6
Fencing	38.8	33.9	46.1
Alternate water source	24.8	21.6	31.9
Water control structures/dams	7.3	7.6	20.0
Other measures	28.6	24.2	20.3

Notes: Only farms adopting conservation measures to protect natural wetland areas were included.
Shares add up to more than 100% because an individual farm could report more than one type of measure to conserve natural wetland areas.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.6.F Conservation measures for the protection of natural wetland areas, by type of wetlands, Saskatchewan, 2001

	Farms		
	Seasonal wetlands	Permanent wetlands	Both wetlands
	number		
Rotational grazing	1,270[B]	1,025[B]	1,830[A]
Fencing	815[A]	805[B]	1,920[A]
Alternate water source	630[A]	625[A]	1,210[A]
Water control structures/dams	380[A]	425[A]	645[A]
Other measures	1,360[B]	1,005[B]	1,580[A]
	%		
Rotational grazing	36.4	37.6	39.4
Fencing	23.4	29.5	41.4
Alternate water source	18.1	22.9	26.1
Water control structures/dams	10.9	15.6	13.9
Other measures	39.0	36.9	34.1

Notes: Only farms adopting conservation measures to protect natural wetland areas were included.
Shares add up to more than 100% because an individual farm could report more than one type of measure to conserve natural wetland areas.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.6.G Conservation measures for the protection of natural wetland areas, by type of wetlands, Alberta, 2001

	Farms		
	Seasonal wetlands	Permanent wetlands	Both wetlands
	number		
Rotational grazing	1,835[B]	1,775[B]	2,805[A]
Fencing	1,410[B]	1,680[A]	2,395[A]
Alternate water source	1,080[A]	1,020[A]	1,900[A]
Water control structures/dams	345[A]	505[A]	780[A]
Other measures	455[B]	920[A]	555[A]
	%		
Rotational grazing	56.8	47.5	58.3
Fencing	43.7	44.9	49.8
Alternate water source	33.4	27.3	39.5
Water control structures/dams	10.7	13.5	16.2
Other measures	14.1	24.6	11.5

Notes: Only farms adopting conservation measures to protect natural wetland areas were included.
Shares add up to more than 100% because an individual farm could report more than one type of measure to conserve natural wetland areas.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.6.H Conservation measures for the protection of natural wetland areas, by type of wetlands, British Columbia, 2001

	Farms		
	Seasonal wetlands	Permanent wetlands	Both wetlands
	number		
Rotational grazing	280[C]	205[B]	465[B]
Fencing	280[C]	415[C]	695[B]
Alternate water source	140[C]	195[B]	315[B]
Water control structures/dams	25[A]	130[B]	145[A]
Other measures	60[B]	180[B]	90[A]
	%		
Rotational grazing	56.6	29.7	49.5
Fencing	56.6	60.1	73.9
Alternate water source	28.3	28.3	33.5
Water control structures/dams	5.1	18.8	15.4
Other measures	12.1	26.1	9.6

Notes: Only farms adopting conservation measures to protect natural wetland areas were included.
Shares add up to more than 100% because an individual farm could report more than one type of measure to conserve natural wetland areas.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.7.A Disposal of milkhouse wash water on Canadian dairy farms with a liquid manure storage system, by farm revenue class, Canada, 2001

	Farms			
	Included in the liquid manure storage system	Treated separately from liquid manure storage system	Not treated	All farms
	number			
Less than $100,000	555[C]	175[B]	400[C]	1,130
$100,000 to $249,999	2,005[B]	395[A]	1,080[B]	3,490
$250,000 to $499,999	2,710[B]	385[A]	630[A]	3,715
More than $500,000	1,695[C]	255[A]	270[B]	2,220
All revenue classes	**6,965[B]**	**1,205[A]**	**2,375[A]**	**10,555**
	%			
Less than $100,000	49.1	15.5	35.4	100
$100,000 to $249,999	57.6	11.4	31.0	100
$250,000 to $499,999	72.8	10.3	16.9	100
More than $500,000	76.4	11.5	12.2	100
All revenue classes	**66.1**	**11.4**	**22.5**	**100**

Notes: Includes only dairy farms with a liquid manure storage system.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.7.B Disposal of milkhouse wash water on Canadian dairy farms with a liquid manure storage system, by farm revenue class, Atlantic Provinces, 2001

	Farms			
	Included in the liquid manure storage system	Treated separately from liquid manure storage system	Not treated	All farms
	number			
Less than $100,000	x	x	x	40
$100,000 to $249,999	F	x	x	90
$250,000 to $499,999	75[D]	35[D]	50[D]	170
More than $500,000	F	x	x	120
All revenue classes	**220[D]**	**80[C]**	**110[C]**	**405**
	%			
Less than $100,000	x	x	x	100
$100,000 to $249,999	F	x	x	100
$250,000 to $499,999	44.1	21.9	31.3	100
More than $500,000	F	x	x	100
All revenue classes	**54.3**	**19.5**	**26.8**	**100**

Notes: Includes only dairy farms with a liquid manure storage system.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.7.C Disposal of milkhouse wash water on Canadian dairy farms with a liquid manure storage system, by farm revenue class, Quebec, 2001

	Farms			
	Included in the liquid manure storage system	Treated separately from liquid manure storage system	Not treated	All farms
	number			
Less than $100,000	225[D]	x	x	450
$100,000 to $249,999	1,135[C]	165[A]	690[B]	1,990
$250,000 to $499,999	1,275[C]	40[A]	390[B]	1,710
More than $500,000	485[D]	x	x	680
All revenue classes	**3,115[B]**	**300[A]**	**1,410[B]**	**4,825**
	%			
Less than $100,000	50.0	x	x	100
$100,000 to $249,999	57.0	8.3	34.7	100
$250,000 to $499,999	74.6	2.3	22.8	100
More than $500,000	71.3	x	x	100
All revenue classes	**64.6**	**6.2**	**29.2**	**100**

Notes: Includes only dairy farms with a liquid manure storage system.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.7.D Disposal of milkhouse wash water on Canadian dairy farms with a liquid manure storage system, by farm revenue class, Ontario, 2001

	Farms			
	Included in the liquid manure storage system	Treated separately from liquid manure storage system	Not treated	All farms
	number			
Less than $100,000	215[E]	75[D]	45[C]	335
$100,000 to $249,999	655[D]	115[B]	245[C]	1,020
$250,000 to $499,999	980[D]	130[B]	55[A]	1,165
More than $500,000	595[D]	45[B]	95[B]	740
All revenue classes	**2,445[C]**	**360[A]**	**445[A]**	**3,260**
	%			
Less than $100,000	64.2	22.4	13.4	100
$100,000 to $249,999	64.5	11.3	24.1	100
$250,000 to $499,999	84.1	11.2	4.7	100
More than $500,000	81.0	6.1	12.9	100
All revenue classes	**75.2**	**11.1**	**13.7**	**100**

Notes: Includes only dairy farms with a liquid manure storage system.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.7.E Disposal of milkhouse wash water on Canadian dairy farms with a liquid manure storage system, by farm revenue class, Manitoba, 2001

	Farms			
	Included in the liquid manure storage system	Treated separately from liquid manure storage system	Not treated	All farms
	number			
Less than $100,000	x	40[E]	F	135
$100,000 to $249,999	75[E]	25[D]	80[E]	180
$250,000 to $499,999	x	F	40[E]	125
More than $500,000	F	x	x	55
All revenue classes	**180[D]**	**140[D]**	**190[D]**	**505**
	%			
Less than $100,000	x	29.6	F	100
$100,000 to $249,999	41.7	13.9	44.4	100
$250,000 to $499,999	x	F	32.0	100
More than $500,000	F	x	x	100
All revenue classes	**35.6**	**27.5**	**37.3**	**100**

Notes: Includes only dairy farms with a liquid manure storage system.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.7.F Disposal of milkhouse wash water on Canadian dairy farms with a liquid manure storage system, by farm revenue class, Saskatchewan, 2001

	Farms			
	Included in the liquid manure storage system	Treated separately from liquid manure storage system	Not treated	All farms
	number			
Less than $100,000	0	x	x	x
$100,000 to $249,999	x	x	x	x
$250,000 to $499,999	F	x	x	85
More than $500,000	F	x	x	80
All revenue classes	**105[D]**	**60[D]**	**55[D]**	**215**
	%			
Less than $100,000	0	x	x	100
$100,000 to $249,999	x	x	x	100
$250,000 to $499,999	F	x	x	100
More than $500,000	F	x	x	100
All revenue classes	**48.8**	**27.3**	**25.0**	**100**

Notes: Includes only dairy farms with a liquid manure storage system.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.7.G Disposal of milkhouse wash water on Canadian dairy farms with a liquid manure storage system, by farm revenue class, Alberta, 2001

	Farms			
	Included in the liquid manure storage system	Treated separately from liquid manure storage system	Not treated	All farms
	number			
Less than $100,000	F	x	x	65
$100,000 to $249,999	F	x	x	75
$250,000 to $499,999	120[D]	45[D]	50[D]	225
More than $500,000	195[E]	x	x	285
All revenue classes	**380[D]**	**170[C]**	**105[C]**	**645**
	%			
Less than $100,000	F	x	x	100
$100,000 to $249,999	F	x	x	100
$250,000 to $499,999	53.3	20.0	23.3	100
More than $500,000	68.4	x	x	100
All revenue classes	**58.9**	**26.4**	**16.0**	**100**

Notes: Includes only dairy farms with a liquid manure storage system.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.7.H Disposal of milkhouse wash water on Canadian dairy farms with a liquid manure storage system, by farm revenue class, British Columbia, 2001

	Farms			
	Included in the liquid manure storage system	Treated separately from liquid manure storage system	Not treated	All farms
	number			
Less than $100,000	F	x	x	75
$100,000 to $249,999	x	x	x	105
$250,000 to $499,999	190[D]	x	x	245
More than $500,000	220[D]	x	x	260
All revenue classes	**515[C]**	**105[B]**	**70[B]**	**690**
	%			
Less than $100,000	F	x	x	100
$100,000 to $249,999	x	x	x	100
$250,000 to $499,999	77.6	x	x	100
More than $500,000	84.6	x	x	100
All revenue classes	**74.6**	**15.2**	**10.1**	**100**

Notes: Includes only dairy farms with a liquid manure storage system.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.8 Disposal of toxic farm wastes, Canada and provinces, 2001

	Farms				
	Returned to supplier	Rinsed and disposed of with domestic waste	Specialized recycling program	Dangerous goods waste pick-up services	Other
	number				
Newfoundland and Labrador	x	80[D]	30[C]	x	60[C]
Prince Edward Island	845[B]	225[A]	300[B]	160[A]	100[A]
Nova Scotia	x	485[B]	720[B]	x	105[A]
New Brunswick	x	260[B]	480[B]	x	75[A]
Quebec	10,180[A]	5,960[A]	7,185[A]	5,215[A]	1,215[A]
Ontario	19,825[A]	5,975[A]	17,380[A]	5,350[A]	4,185[A]
Manitoba	2,715[A]	1,795[A]	10,365[A]	2,260[A]	2,030[A]
Saskatchewan	16,945[A]	5,015[A]	22,515[A]	11,275[A]	6,320[A]
Alberta	10,875[A]	3,480[A]	27,055[A]	7,330[A]	3,230[A]
British Columbia	3,490[A]	1,555[A]	3,460[A]	600[A]	600[A]
Canada	**66,215[A]**	**24,835[A]**	**89,485[A]**	**32,550[A]**	**17,920[A]**
	%				
Newfoundland and Labrador	x	47.1	17.6	x	35.3
Prince Edward Island	69.5	18.5	24.7	13.2	8.2
Nova Scotia	x	30.8	45.7	x	6.7
New Brunswick	x	18.6	34.3	x	5.4
Quebec	45.8	26.8	32.4	23.5	5.5
Ontario	53.3	16.1	46.7	14.4	11.3
Manitoba	19.3	12.8	73.7	16.1	14.4
Saskatchewan	40.5	12.0	53.8	27.0	15.1
Alberta	28.3	9.1	70.4	19.1	8.4
British Columbia	50.3	22.4	49.8	8.6	8.6
Canada	**40.1**	**15.0**	**54.2**	**19.7**	**10.9**

Note: Shares add up to more than 100% as an individual farm could report more than one disposal method for toxic farm wastes.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.9.A Use of irrigation systems, by farm type, Canada, 2001

	Farms					
	Using irrigation		Not using irrigation		All farms	
	number	%	number	%	number	%
Grain and oilseed	2,095[A]	3.0	66,650[A]	97.0	68,745	100
Potato	390[B]	31.0	870[B]	69.0	1,260	100
Fruit and vegetable	3,835[A]	54.6	3,195[A]	45.4	7,030	100
Other[1]	7,310[A]	7.9	85,255[A]	92.1	92,565	100
All farms	**13,630[A]**	**8.0**	**155,970[A]**	**92.0**	**169,600**	**100**

1. Includes farm types not listed such as dairy and beef farms. These farms may have irrigation systems for secondary farm activities.
Notes: Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.9.B Use of irrigation systems, by farm type, Eastern Canada, 2001

	Farms					
	Using irrigation		Not using irrigation		All farms	
	number	%	number	%	number	%
Grain and oilseed	425[A]	2.6	15,975[A]	97.4	16,400	100
Potato	185[B]	18.5	815[B]	81.5	1,000	100
Fruit and vegetable	2,045[B]	42.1	2,815[B]	57.9	4,860	100
Other[1]	2,535[A]	5.4	44,530[A]	94.6	47,065	100
All farms	**5,190[A]**	**7.5**	**64,135[A]**	**92.5**	**69,325**	**100**

1. Includes farm types not listed such as dairy and beef farms. These farms may have irrigation systems for secondary farm activities.
Notes: Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.9.C Use of irrigation systems, by farm type, Western Canada, 2001

	Farms					
	Using irrigation		Not using irrigation		All farms	
	number	%	number	%	number	%
Grain and oilseed	1,665[A]	3.2	50,675[A]	96.8	52,340	100
Potato	205[E]	82.0	45[C]	18.0	250	100
Fruit and vegetable	1,795[B]	82.5	380[A]	17.5	2,175	100
Other[1]	4,775[A]	10.5	40,720[A]	89.5	45,495	100
All farms	**8,440[A]**	**8.4**	**91,820[A]**	**91.6**	**100,260**	**100**

1. Includes farm types not listed such as dairy and beef farms. These farms may have irrigation systems for secondary farm activities.
Notes: Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.10.A Types of irrigation systems used, by farm type, Canada, 2001

	Systems				
	Gun	Sprinkler	Drip or trickle	Other[1]	All farms
			number		
Grain and oilseed	375[B]	1,380[C]	125[A]	460[B]	2,340
Potato	225[C]	230[D]	25[B]	25[A]	505
Fruit and vegetable	1,085[A]	2,250[B]	1,265[A]	170[A]	4,770
Other[2]	2,080[A]	4,220[A]	710[A]	1,595[A]	8,605
All farms	**3,770[A]**	**8,085[A]**	**2,125[A]**	**2,245[A]**	**16,225**
			%		
Grain and oilseed	16.0	59.0	5.3	19.7	100
Potato	44.6	45.5	5.0	5.0	100
Fruit and vegetable	22.7	47.2	26.5	3.6	100
Other[2]	24.2	49.1	8.2	18.5	100
All farms	**23.2**	**49.8**	**13.1**	**13.8**	**100**

1. Other irrigation systems could be subsurface systems, surface flooding or any other systems.
2. Includes farm types not listed such as dairy and beef farms. These farms may have irrigation systems for **secondary enterprises.**

Note: Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.10.B Types of irrigation systems used, by farm type, Eastern Canada, 2001

	Systems				
	Gun	Sprinkler	Drip or trickle	Other[1]	All farms
			number		
Grain and oilseed	x	85[C]	x	100[C]	470
Potato	150[D]	50[C]	x	x	225
Fruit and vegetable	880[B]	910[B]	705[B]	145[A]	2,640
Other[2]	1,335[B]	705[B]	365[A]	380[A]	2,785
All farms	**2,550[B]**	**1,760[A]**	**1,200[A]**	**630[A]**	**6,140**
			%		
Grain and oilseed	x	18.1	x	21.3	100
Potato	67.1	22.7	x	x	100
Fruit and vegetable	33.3	34.5	26.7	5.5	100
Other[2]	47.8	25.2	13.1	14.0	100
All farms	**41.6**	**28.7**	**19.6**	**10.1**	**100**

1. Other irrigation systems could be subsurface systems, surface flooding or any other systems.
2. Includes farm types not listed such as dairy and beef farms. These farms may have irrigation systems for **secondary enterprises.**

Note: Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.10.C Types of irrigation systems used, by farm type, Western Canada, 2001

	Systems				
	Gun	Sprinkler	Drip or trickle	Other[1]	All farms
	number				
Grain and oilseed	x	1,290[C]	x	360[B]	1,875
Potato	70[D]	180[E]	x	x	280
Fruit and vegetable	205[A]	1,335[B]	555[B]	25[A]	2,120
Other[2]	740[A]	3,515[B]	340[A]	1,210[B]	5,805
All farms	**1,215[A]**	**6,330[A]**	**920[A]**	**1,605[A]**	**10,070**
	%				
Grain and oilseed	x	68.9	x	19.2	100
Potato	25.6	64.4	x	x	100
Fruit and vegetable	9.7	63.0	26.2	1.2	100
Other[2]	12.8	60.6	5.8	20.8	100
All farms	**12.1**	**62.9**	**9.1**	**15.9**	**100**

1. Other irrigation systems could be subsurface systems, surface flooding or any other systems.
2. Includes farm types not listed such as dairy and beef farms. These farms may have irrigation systems for **secondary enterprises**.

Note: Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.11 Frequency of domestic water testing on Canadian farms, Canada and provinces, 2001

	Farms				
	Twice a year or more	Once a year	Ever two years	Not tested regularly	All farms
	number				
Newfoundland and Labrador	x	x	x	x	170
Prince Edward Island	x	x	x	x	1,380
Nova Scotia	115[A]	285[A]	190[A]	1,470[B]	2,060
New Brunswick	120[A]	205[A]	240[A]	1,290[B]	1,855
Quebec	865[A]	3,495[A]	2,525[A]	14,045[A]	20,930
Ontario	5,785[A]	10,925[A]	5,415[A]	17,655[A]	39,780
Manitoba	725[A]	1,745[A]	1,690[A]	9,185[A]	13,345
Saskatchewan	1,875[A]	4,345[A]	4,650[A]	23,660[A]	34,530
Alberta	1,160[A]	2,960[A]	5,230[A]	28,700[A]	38,050
British Columbia	320[A]	730[A]	645[A]	4,555[A]	6,250
Canada	**11,095[A]**	**25,000[A]**	**20,715[A]**	**101,535[A]**	**158,345**
	%				
Newfoundland and Labrador	x	x	x	x	100
Prince Edward Island	x	x	x	x	100
Nova Scotia	5.6	13.8	9.2	71.4	100
New Brunswick	6.5	11.1	12.9	69.5	100
Quebec	4.1	16.7	12.1	67.1	100
Ontario	14.5	27.5	13.6	44.4	100
Manitoba	5.4	13.1	12.7	68.8	100
Saskatchewan	5.4	12.6	13.5	68.5	100
Alberta	3.0	7.8	13.7	75.4	100
British Columbia	5.1	11.7	10.3	72.9	100
Canada	**7.0**	**15.8**	**13.1**	**64.1**	**100**

Notes: Excludes farms that do not need to test their domestic water (e.g. those that are connected to the municipal water supply).
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.12.A Frequency of domestic water testing on Canadian farms, by farm type, Canada, 2001

	Farms				
	Twice a year or more	Once a year	Ever two years	Not tested regularly	All farms
	number				
Grain and oilseed	3,350[A]	7,030[A]	6,900[A]	35,305[A]	52,585
Beef	2,595[A]	5,760[A]	6,425[A]	34,830[A]	49,610
Dairy	1,295[A]	3,490[A]	2,580[A]	10,015[A]	17,650
Hog	490[A]	1,555[A]	870[B]	2,465[A]	5,380
Poultry and egg	575[A]	1,125[B]	345[A]	1,070[B]	3,115
Potato	40[A]	175[A]	150[A]	645[B]	1,010
Fruit and vegetable	1,010[A]	1,855[A]	665[A]	3,290[A]	6,820
Other[1]	1,545[A]	3,635[A]	2,525[A]	12,840[A]	20,545
	%				
Grain and oilseed	6.4	13.4	13.1	67.1	100
Beef	5.2	11.6	13.0	70.2	100
Dairy	7.3	19.8	14.6	56.7	100
Hog	9.1	28.9	16.2	45.8	100
Poultry and egg	18.5	36.1	11.1	34.3	100
Potato	4.0	17.3	34.2	63.9	100
Fruit and vegetable	14.8	27.2	5.1	48.2	100
Other[1]	7.5	17.7	1.7	62.5	100

1. Includes farm types not listed such as dairy and beef farms. These farms may have irrigation systems for secondary enterprises.
Notes: Excludes farms that do not need to test their domestic water (e.g. those that are connected to the municipal water supply).
Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.12.B Frequency of domestic water testing on Canadian farms, by farm type, Atlantic Provinces, 2001

	Farms				
	Twice a year or more	Once a year	Ever two years	Not tested regularly	All farms
	number				
Grain and oilseed	x	x	x	95[E]	115
Beef	45[A]	135[A]	130[A]	1,125[C]	1,435
Dairy	40[A]	135[A]	95[A]	765[C]	1,035
Hog	25[D]	45[D]	30[C]	85[D]	185
Poultry and egg	x	55[B]	x	115[C]	460
Potato	x	x	95[B]	390[C]	590
Fruit and vegetable	95[B]	170[B]	70[B]	450[C]	785
Other[1]	105[B]	170[B]	105[B]	685[C]	1,065
	%				
Grain and oilseed	x	x	x	82.6	100
Beef	3.1	9.4	9.1	78.4	100
Dairy	3.9	13.0	9.2	73.9	100
Hog	13.5	24.3	16.2	45.9	100
Poultry and egg	x	12.0	x	25.0	100
Potato	x	x	16.1	66.1	100
Fruit and vegetable	12.1	21.7	8.9	57.3	100
Other[1]	9.9	16.0	9.9	64.3	100

1. Includes farm types not listed such as dairy and beef farms. These farms may have irrigation systems for secondary enterprises.
Notes: Excludes farms that do not need to test their domestic water (e.g. those that are connected to the municipal water supply).
Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.12.C Frequency of domestic water testing on Canadian farms, by farm type, Quebec, 2001

	Farms				
	Twice a year or more	Once a year	Ever two years	Not tested regularly	All farms
	number				
Grain and oilseed	55[A]	270[B]	115[A]	1,440[C]	1,880
Beef	110[A]	345[A]	385[A]	2,990[B]	3,830
Dairy	265[A]	1,035[A]	1,130[A]	4,855[B]	7,285
Hog	100[A]	725[C]	275[B]	740[C]	1,840
Poultry and egg	145[C]	205[D]	85[C]	200[D]	635
Potato	x	70[D]	x	100[D]	195
Fruit and vegetable	125[A]	440[B]	165[B]	990[C]	1,720
Other[1]	60[A]	365[A]	305[A]	2,665[B]	3,395
	%				
Grain and oilseed	2.9	14.4	6.1	76.6	100
Beef	2.9	9.0	10.1	78.1	100
Dairy	3.6	14.2	15.5	66.6	100
Hog	5.4	39.4	14.9	40.2	100
Poultry and egg	22.8	32.3	13.4	31.5	100
Potato	x	35.9	x	51.3	100
Fruit and vegetable	7.3	25.6	9.6	57.6	100
Other[1]	1.8	10.8	9.0	78.5	100

1. Includes farm types not listed such as dairy and beef farms. These farms may have irrigation systems for secondary enterprises.
Notes: Excludes farms that do not need to test their domestic water (e.g. those that are connected to the municipal water supply).
Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.12.D Frequency of domestic water testing on Canadian farms, by farm type, Ontario, 2001

	Farms				
	Twice a year or more	Once a year	Ever two years	Not tested regularly	All farms
	number				
Grain and oilseed	1,190[A]	2,210[A]	1,470[A]	5,415[A]	10,285
Beef	1,580[A]	2,405[A]	1,410[A]	4,855[A]	10,250
Dairy	825[A]	2,015[A]	1,055[A]	3,185[B]	7,080
Hog	185[B]	515[B]	370[B]	760[C]	1,830
Poultry and egg	305[C]	515[C]	160[B]	270[B]	1,250
Potato	x	x	x	F	100
Fruit and vegetable	640[B]	975[B]	290[A]	850[B]	2,755
Other[1]	950[A]	2,110[B]	615[A]	2,095[B]	5,770
	%				
Grain and oilseed	11.6	21.5	14.3	52.6	100
Beef	15.4	23.5	13.8	47.4	100
Dairy	11.7	28.5	14.9	45.0	100
Hog	10.1	28.1	20.2	41.5	100
Poultry and egg	24.4	41.2	12.8	21.6	100
Potato	x	x	x	F	100
Fruit and vegetable	23.2	35.4	10.5	30.9	100
Other[1]	16.5	36.6	10.7	36.3	100

1. Includes farm types not listed such as dairy and beef farms. These farms may have irrigation systems for secondary enterprises.
Notes: Excludes farms that do not need to test their domestic water (e.g. those that are connected to the municipal water supply).
Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.12.E Frequency of domestic water testing on Canadian farms, by farm type, Manitoba, 2001

	Farms				
	Twice a year or more	Once a year	Ever two years	Not tested regularly	All farms
	number				
Grain and oilseed	320[A]	625[A]	595[A]	3,745[B]	5,285
Beef	160[A]	575[A]	675[A]	3,445[B]	4,855
Dairy	25[B]	130[C]	55[B]	335[D]	545
Hog	70[B]	145[C]	75[B]	295[D]	585
Poultry and egg	x	55[E]	x	F	180
Potato	x	x	20[D]	F	80
Fruit and vegetable	x	30[D]	x	65[E]	110
Other[1]	120[A]	180[B]	205[B]	1,065[C]	1,570
	%				
Grain and oilseed	6.1	11.8	11.3	70.9	100
Beef	3.3	11.8	13.9	71.0	100
Dairy	4.6	23.9	10.1	61.5	100
Hog	12.0	24.8	12.8	50.4	100
Poultry and egg	x	30.6	x	F	100
Potato	x	x	25.0	F	100
Fruit and vegetable	x	27.3	x	59.1	100
Other[1]	7.6	11.5	13.1	67.8	100

1. Includes farm types not listed such as dairy and beef farms. These farms may have irrigation systems for secondary enterprises.
Notes: Excludes farms that do not need to test their domestic water (e.g. those that are connected to the municipal water supply).
Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.12.F Frequency of domestic water testing on Canadian farms, by farm type, Saskatchewan, 2001

	Farms				
	Twice a year or more	Once a year	Ever two years	Not tested regularly	All farms
	number				
Grain and oilseed	1,355[A]	2,865[A]	3,065[A]	15,695[A]	22,980
Beef	335[A]	1,050[A]	1,130[A]	5,925[B]	8,440
Dairy	x	55[C]	x	150[D]	255
Hog	x	45[D]	x	100[E]	205
Poultry and egg	0	F	0	F	135
Potato	x	x	x	x	x
Fruit and vegetable	x	25[E]	x	45[E]	85
Other[1]	95[A]	180[A]	330[B]	1,550[C]	2,155
	%				
Grain and oilseed	5.9	12.5	13.3	68.3	100
Beef	4.0	12.4	13.4	70.2	100
Dairy	x	21.6	x	58.8	100
Hog	x	22.0	x	48.8	100
Poultry and egg	0	F	0	F	100
Potato	x	x	x	x	100
Fruit and vegetable	x	29.4	x	52.9	100
Other[1]	4.4	8.4	15.3	71.9	100

1. Includes farm types not listed such as dairy and beef farms. These farms may have irrigation systems for secondary enterprises.
Notes: Excludes farms that do not need to test their domestic water (e.g. those that are connected to the municipal water supply).
Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.12.G Frequency of domestic water testing on Canadian farms, by farm type, Alberta, 2001

	Farms				
	Twice a year or more	Once a year	Ever two years	Not tested regularly	All farms
	number				
Grain and oilseed	425[A]	1,040[A]	1,645[A]	8,795[A]	11,905
Beef	365[A]	1,135[A]	2,540[A]	14,490[A]	18,530
Dairy	75[B]	90[B]	160[C]	375[C]	700
Hog	70[B]	85[B]	95[B]	460[D]	710
Poultry and egg	x	60[D]	x	165[E]	285
Potato	x	x	0	F	45
Fruit and vegetable	25[B]	40[B]	25[A]	265[D]	355
Other[1]	105[A]	450[A]	690[A]	3,650[B]	4,895
	%				
Grain and oilseed	3.6	8.7	13.8	73.9	100
Beef	2.0	6.1	13.7	78.2	100
Dairy	10.7	12.9	22.9	53.6	100
Hog	9.9	12.0	13.4	64.8	100
Poultry and egg	x	21.1	x	57.9	100
Potato	x	x	0	F	100
Fruit and vegetable	7.0	11.3	7.0	74.6	100
Other[1]	2.1	9.2	14.1	74.6	100

1. Includes farm types not listed such as dairy and beef farms. These farms may have irrigation systems for secondary enterprises.
Notes: Excludes farms that do not need to test their domestic water (e.g. those that are connected to the municipal water supply).
Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.12.H Frequency of domestic water testing on Canadian farms, by farm type, British Columbia, 2001

	Farms				
	Twice a year or more	Once a year	Ever two years	Not tested regularly	All farms
	number				
Grain and oilseed	x	x	0	F	120
Beef	x	x	170[A]	2,000[C]	2,285
Dairy	45[B]	40[B]	55[B]	340[C]	480
Hog	x	x	x	F	35
Poultry and egg	30[B]	170[D]	35[B]	155[D]	390
Potato	x	x	x	x	x
Fruit and vegetable	110[B]	185[B]	90[A]	630[C]	1,015
Other[1]	115[A]	185[A]	275[B]	1,130[C]	1,705
	%				
Grain and oilseed	x	x	0	F	100
Beef	x	x	7.4	87.5	100
Dairy	9.4	8.3	11.5	70.8	100
Hog	x	x	x	F	100
Poultry and egg	7.7	43.6	9.0	39.7	100
Potato	x	x	x	x	100
Fruit and vegetable	10.8	18.2	8.9	62.1	100
Other[1]	6.7	10.9	16.1	66.3	100

1. Includes farm types not listed such as dairy and beef farms. These farms may have irrigation systems for secondary enterprises.
Notes: Excludes farms that do not need to test their domestic water (e.g. those that are connected to the municipal water supply).
Farm type is determined by the activity on an individual farm that generated more than 50% of farm revenue.
Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.

Table A.13 Level of implementation of beneficial management practices (BMPs) for water, Canada and provinces, 2001

	Farms					
	Fully implemented	Partially implemented	Not available in my region	Unfamiliar with BMPs for my region	Not relevant for my operation	All farms
	number					
Newfoundland and Labrador	60[B]	x	x	75[B]	105[B]	300
Prince Edward Island	350[B]	170[A]	25[A]	455[B]	260[B]	1,260
Nova Scotia	200[A]	195[A]	35[A]	1,475[B]	315[A]	2,220
New Brunswick	320[A]	x	x	800[B]	515[B]	1,845
Quebec	9,780[A]	5,155[A]	225[A]	1,815[A]	8,340[A]	25,315
Ontario	8,490[A]	5,510[A]	695[A]	18,270[A]	9,820[A]	42,785
Manitoba	2,815[A]	1,860[A]	240[A]	5,875[A]	4,410[A]	15,200
Saskatchewan	3,240[A]	3,045[A]	1,595[A]	27,995[A]	7,775[A]	43,650
Alberta	7,045[A]	4,070[A]	430[A]	21,785[A]	8,345[A]	41,675
British Columbia	3,160[A]	1,055[A]	315[A]	1,865[A]	2,495[A]	8,890
Canada	**35,435[A]**	**21,205[A]**	**3,670[A]**	**80,425[A]**	**42,390[A]**	**183,125**
	%					
Newfoundland and Labrador	20.0	x	x	25.0	35.0	100
Prince Edward Island	27.8	13.5	2.0	36.1	20.6	100
Nova Scotia	9.0	8.8	1.6	66.4	14.2	100
New Brunswick	17.3	x	x	43.4	27.9	100
Quebec	38.6	20.4	0.9	7.2	32.9	100
Ontario	19.8	12.9	1.6	42.7	23.0	100
Manitoba	18.5	12.2	1.6	38.7	29.0	100
Saskatchewan	7.4	7.0	3.7	64.1	17.8	100
Alberta	16.9	9.8	1.0	52.3	20.0	100
British Columbia	35.5	11.9	3.5	21.0	28.1	100
Canada	**19.4**	**11.6**	**2.0**	**43.9**	**23.1**	**100**

Note: Due to rounding, figures may not add up to totals.
Source: Statistics Canada, 2001 Farm Environmental Management Survey.